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July 12, 1996

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Mr. William F. Caton  
Secretary  
Federal Communications Commission  
Room 222  
1919 M Street, N.W.  
Washington, D.C. 20554

RECEIVED  
JUL 12 1996  
Federal Communications Commission  
Office of Secretary

**Re: EX PARTE: Implementation of the Local Competition Provisions in the  
Telecommunications Act of 1996; CC Docket No. 96-98**

Dear Mr. Caton:

Pursuant to Commission staff request, MCI Telecommunications Corporation is providing the attached information on the Network Interface Device, the point of demarcation between inside wiring and a subscriber loop.

Yours truly,

Don Sussman

Enclosure  
DHS

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# NETWORK INTERFACE DEVICE

The Network Interface Device (NID) is the point of demarcation between inside wiring and a subscriber loop. Inside wire has long been deregulated.<sup>1</sup> In today's monopoly environment, the NID, provided by the incumbent local exchange carrier (ILEC), is a physical point of interconnection that joins inside wire with a loop facility owned by the ILEC. While equipment manufacturers produce different models of NID equipment, the function of all is generally the same, *i.e.*, to connect ILEC loops to inside wire. From an engineering perspective, the NID is generally a "passive" device, which performs no multiplexing, switching or other call processing functionality.

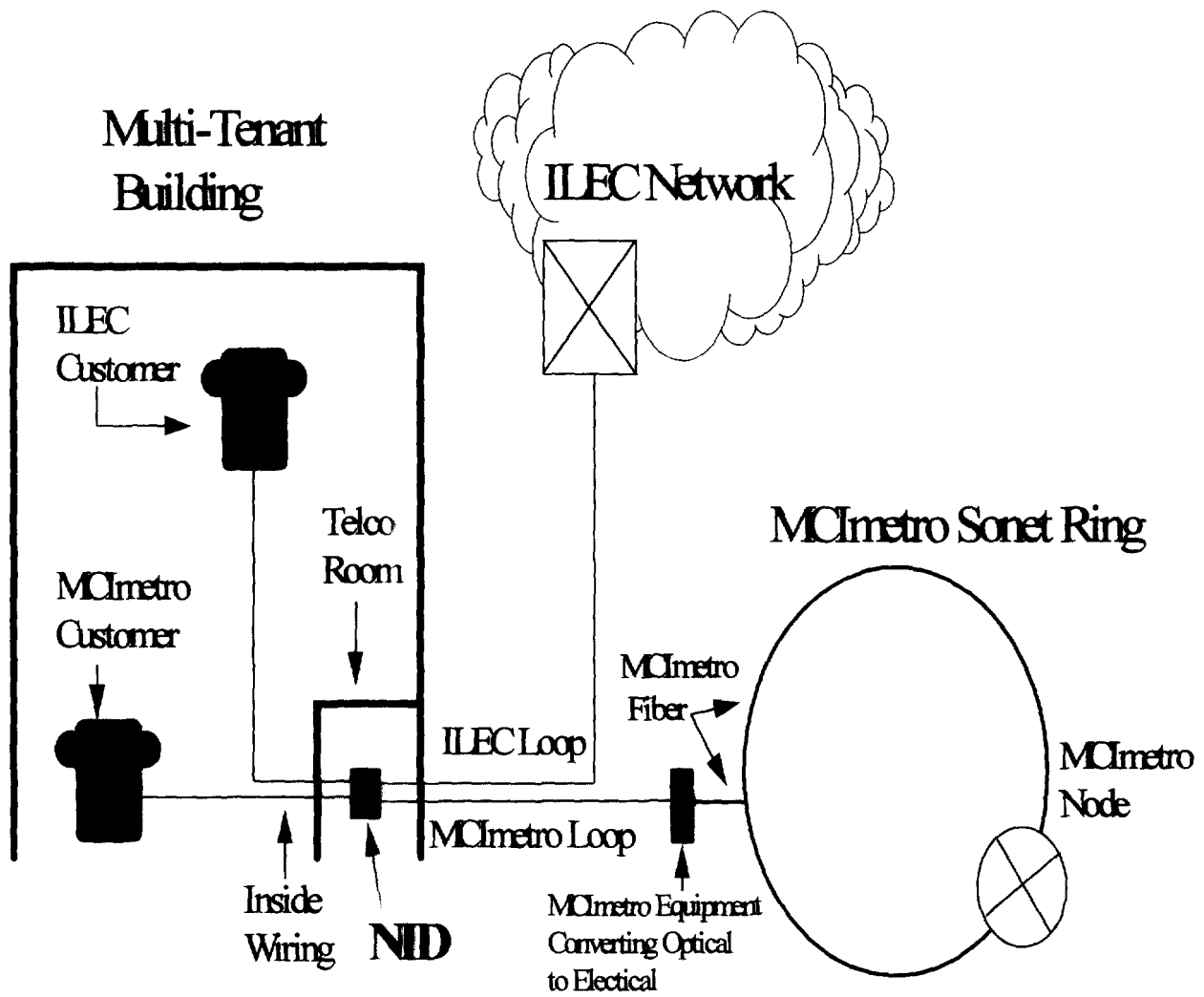
## MCI's Facilities-Based Strategy

In the chart, below, we display a NID in relation to an ILEC network and MCImetro's local network. In that network diagram, the NID is displayed in the "telco room" of a multi-tenant building. In single-family residential applications or small business applications, the NID would be located on the exterior of a residence or business, attached to the side of the structure and housed in a box to protect it from the elements. For the purposes of this discussion, the network interface device we will present will be the NID in a multi-tenant building.

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<sup>1</sup>In the Matter of Detariffing the Installation and Maintenance of Insider Wiring, CC Docket No. 79-105, Second Report and Order, 51 Fed Reg 8498, (1986), Detariffing the Installation and Maintenance of Insider Wiring, CC Docket No. 79-105, Memorandum Opinion and Order, 1 FCC Rcd 1190, (1986).

# Local Exchange Networks



A key part of MCI's facilities-based local exchange strategy is the ability to connect our local Sonet fiber optic rings to the customer premises. This allows us to offer our customers better quality using more efficient technology than if we relied solely on ILEC loop plant. Unfortunately, construction of Sonet rings in local markets is as time-consuming as it is capital-intensive. While this is our network architecture plan for the future, we will be able to initiate it in only a few markets this year. For the most part, we must continue to rely on ILEC facilities if we are to become a national presence in the local exchange market. It is nevertheless extremely important to our ability to grow our facilities-based exchange business to connect customers directly to our Sonet rings without relying on ILEC loop, as we construct new local Sonet rings.

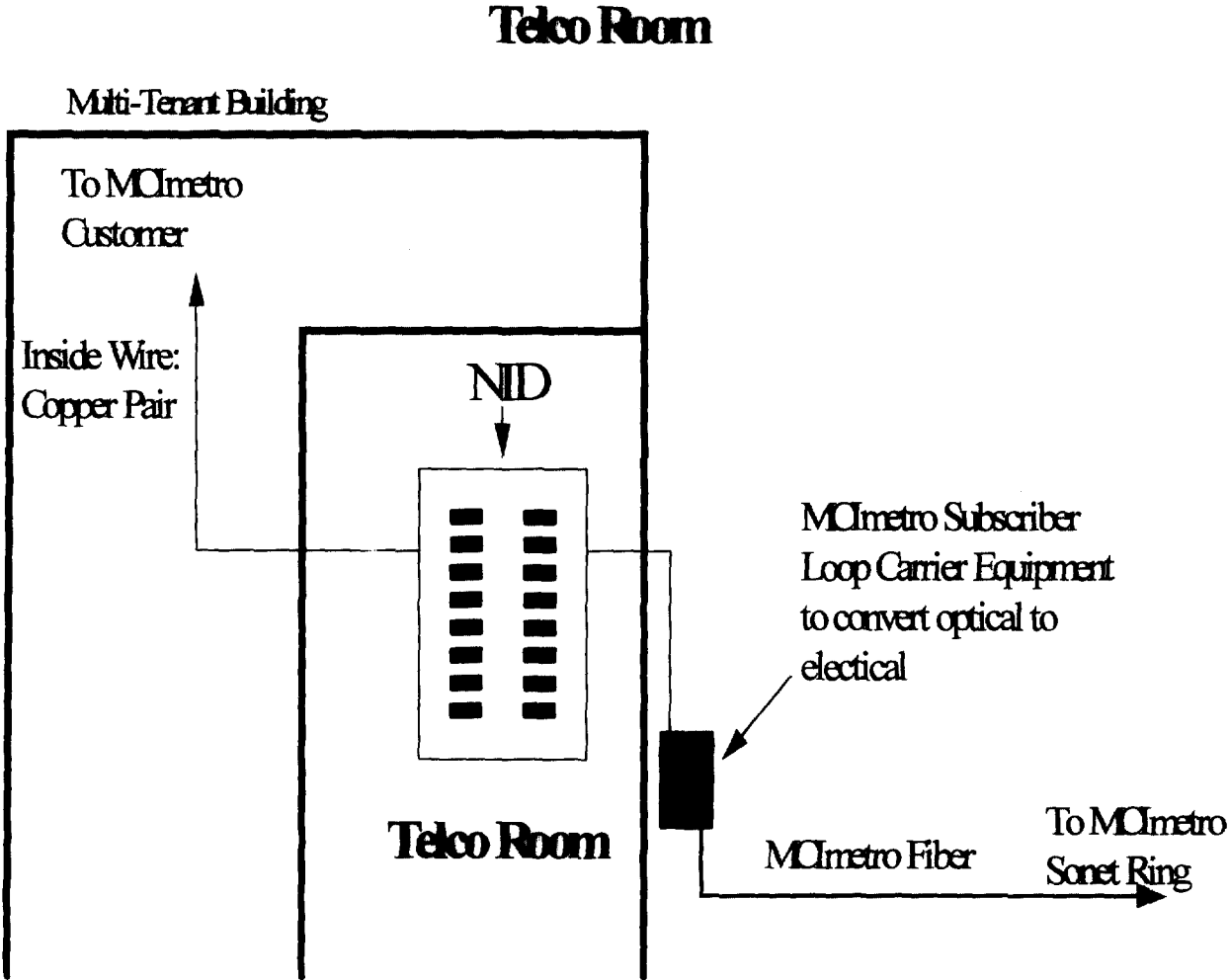
#### **NID Must Be Unbundled**

A new entrant faces many obstacles in signing up customers inside a multi-tenant building. For example, to the extent the new entrant wants to bring its own loop into the "telco room" of the building, it must get the building owner's consent to bring loop plant in through the exterior of the structure. In some cases, the new entrant may be able to exercise its rights under Section 251(b)(4) to utilize ILEC conduit that enters the building.<sup>2</sup> It must also gain the owner's permission to access the telco room. These latter two obstacles are not addressed by the local competition provisions of

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<sup>2</sup> In other cases, the conduit may be owned by the building owner. Thus, Section 251(b)(4) would not apply, and a new entrant would have to negotiate for the use of that conduit with the building owner, or to add new conduit.

Section 251, and are the responsibility of the new entrant to negotiate with the building owner.



There is, however, one final obstacle that can and should be addressed by the Commission in its 251 decision. Once a new entrant has agreed with the building owner to allow the new entrant's facilities to access the telco room, the new entrant is confronted with the problem of how to connect its loop to inside wire that runs from the telco room to the customer premises inside the building. In most multi-tenant buildings, it is as a practical matter difficult to make modifications to inside wire for the following reasons:

- inside wire generally is "rigid" and hard to move once it is installed -- for example, there is no extra wire on the inside wire's side of the network demarcation point that would enable a new entrant to install its own NID, and connect the inside wire to the new entrant's NID, even if the ILEC NID and the new entrant's NID were located side-by-side
- inside wire is not readily accessible as individual pairs are braided into cables of 25 or more pairs
- installing new inside wiring on top of existing inside wiring, or completely re-wiring the buildings, is expensive, and would make local service competition difficult or impractical if the cost had to be paid by the new entrant
- a reinstallation of inside wire is disruptive to building tenants

- in older buildings that continue to contain asbestos in shafts hanging inside wiring, the level of expense and the amount of disruption to the building increases exponentially

The only practical solution is to allow the new entrant to purchase the unbundled NID element from the ILEC, and to connect its loop plant to the ILEC's NID.

#### Technical Description of the NID

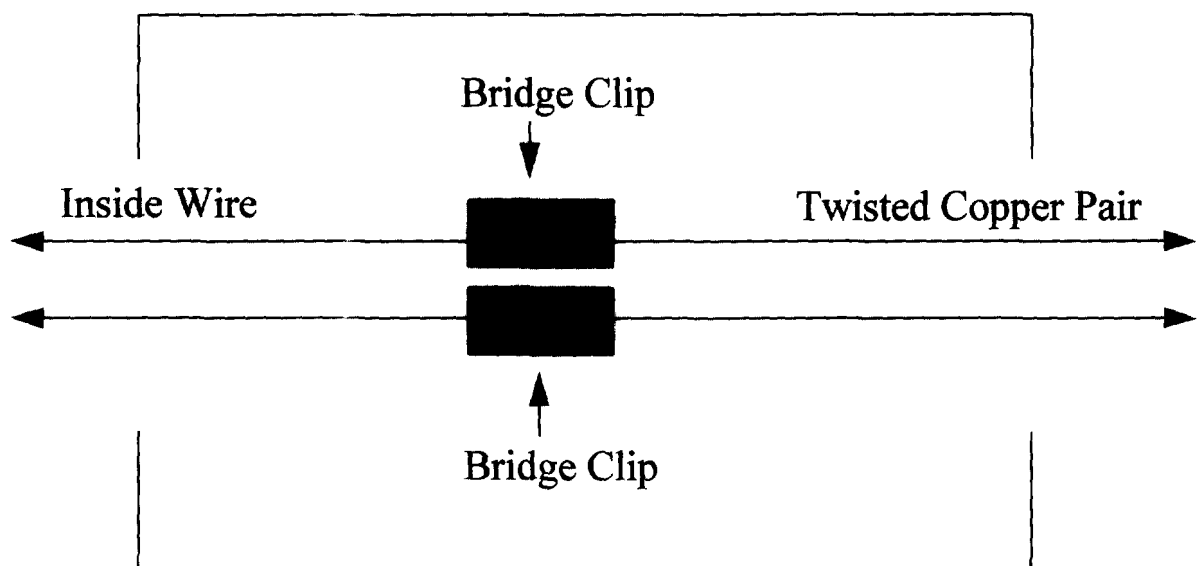
As discussed above, the NID itself serves a simple connection between inside wire and loop facilities. In a multi-tenant building, the NID typically consists of a "board" inside a telco room, usually located in the basement of the structure.<sup>3</sup> On the board are smaller units, which for the purposes of this paper we will label "interconnection units." Network loop facilities (twisted copper pair) are wired into one side of the interconnection unit, and inside wire is wired in to the other side. In a typical NID facility, up to 50 copper pairs are connected to the unit on the network side, and correspond to the same number of inside wire copper pairs that are connected to the unit on the opposite side of the block. Each strand of copper is connected by placing a 1/2 to 3/4 inch piece of metal, called a "bridge clip", between the inside wire termination and the corresponding network loop termination. In another commonly found NID

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<sup>3</sup> Inside wire leaving the telco room is fed through "riser" facilities to each floor in the building, and through the walls and ceilings of rooms to the customer premises.

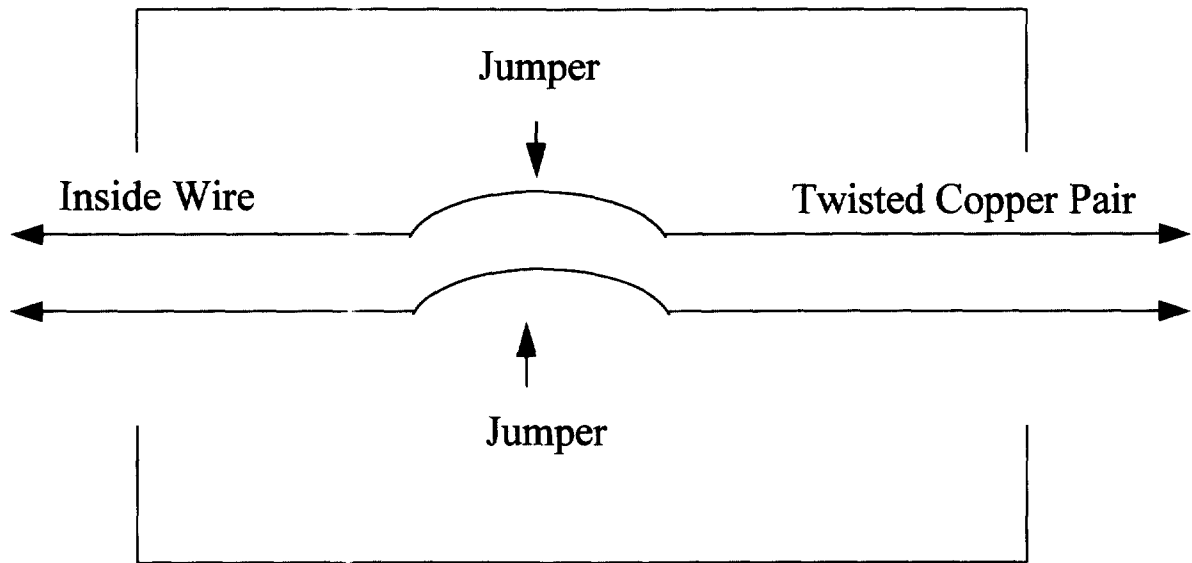
arrangement, network loop facilities are terminated in one unit and inside wire in a second unit. Here, the network side and inside wire pairs are connected by a length of wire called a "jumper." The bridge clip or jumper is easily attached and removed

### **“Interconnection Unit” with Bridge Clip**





## **“Interconnection Unit” with Jumper**



To change a customer from ILEC service to new entrant service, a technician would remove the bridge clip or jumper, disconnecting the ILEC network copper pair, and connect the inside wire termination to the new entrant’s copper pair. There is no possible issue with respect to the technical feasibility of accessing the NID, disconnecting ILEC service, and connecting a new entrant’s loop plant.

Arguments that raise issues of technical feasibility on the grounds that engineering standards, such as electrical overvoltage requirements, must be met in NID

applications are misplaced.<sup>4</sup> MCImetro, and new entrants generally, have demonstrated a track record of meeting or exceeding all industry engineering standards relative to the provision of exchange service. Nothing in MCI's proposal for unbundled access to the NID would cause harm to the ILEC network, a new entrant's network, the inside wire, or to our customer's equipment.

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<sup>4</sup> Ameritech Reply Comments at 19.